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Stefan Hornung

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EXAMINER

SEMENENKO, YURIY

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/538,269	Applicant(s) HORNUNG ET AL.	
	Examiner YURIY SEMENENKO	Art Unit 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11 and 13-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-26 and 32-36 is/are allowed.
- 6) ☒ Claim(s) 11-17 and 27-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/27/2009 has been entered.

Response to Amendment

2. Amendment filed on 07/27/2009 has been entered.
Claims 32-36 are newly added.
Claims 11 and 13 – 36 are now pending in the application.

Claims

3. Claims 11, 17 and 18 amendments, filed on 07/27/2009 are considered and acknowledged.

Claim Rejections - 35 USC § 112

4. Claims 11, 17 and 18 amendments, filed on 07/27/2009 are considered and acknowledged.

Specification

5. The disclosure is objected to because of there is not any information about limitations “the phase terminal is structurally shaped identically to one of...” as recited claims 11 and 17.

Appropriate correction is required.

Claim Objections

6. Claims 11 and 17 are objected to because of the following informalities: claims 11, line 16 and claim 17, lines 13-14: it is unclear and ambiguity “the phase terminal is structurally shaped identically to one of the positive terminal or the negative terminal.” The claim language needs to be clarified.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7.1. Claims 11, 13-15, 17 and 27 are rejected under 35U.S.C. 103(a) as being unpatentable over Watanabe (Patent # JP-60101958) hereinafter Watanabe in view of Legal Precedent.

Regarding claim 11: Watanabe discloses in fig. 3 a converter module, comprising: a positive terminal 1; a negative terminal 4; a phase terminal 2; a first semiconductor chip D_2 , fig. 2; and a second semiconductor chip D_1 ; wherein the positive terminal 1, the negative terminal 4, the phase terminal 2, the first semiconductor chip D_2 , and the second semiconductor chip D_1 are situated on top of one another in a stack, wherein at least one of the positive terminal, the negative terminal, and the phase terminal includes a contact plate 4A, fig. 4, a bar-shaped terminal lug 4 which is positioned asymmetrically on the contact plate, and an auxiliary element 1B, fig. 6 which prevents the at least one of the positive terminal, the negative terminal, and the phase terminal from tilting about a longitudinal axis of the terminal lug, the auxiliary element being able to be detached after the converter module is assembled. Although Watanabe doesn't explicitly teach the phase terminal is structurally shaped identically to one of the positive terminal or the negative terminal, at time the invention was made, it was well known, that electrical terminals can have different shapes and sizes. For example, Watanabe teaches different shapes of the terminals of the module (shown in fig. 3). Further the courts have held that change in shape or change in size of configuration, without any

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criticality, is within the level of skill in the art as particular shape or size claimed by applicant is nothing more than one of numerous shape or size that a person of ordinary skill in the art would have found obvious to provide using routine experimentation based on its suitability for the intended use of the invention, See *In re Dailey*, 149 USPQ 47 (CCPA 1966).

Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made for Watanabe to include in his invention the phase terminal is structurally shaped identically to one of the positive terminal or the negative terminal in order to simplify manufacturing process and since the courts have held that change in shape or change in size of configuration, without any criticality, is within the level of skill in the art as particular shape or size claimed by applicant is nothing more than one of numerous shape or size that a person of ordinary skill in the art would have found obvious to provide using routine experimentation based on its suitability for the intended use of the invention, See *In re Dailey*, 149 USPQ 47 (CCPA 1966).

Regarding claim 13: Watanabe as modified discloses the converter module as recited in claim 11, wherein the bar-shaped terminal lug 1, fig. 4 is situated offset with respect to a plane created by the contact plate 1A.

Regarding claim 14: Watanabe as modified discloses the converter module as recited in claim 13, wherein at least two of the positive terminal 1, fig.4, the negative terminal 4, and the phase terminal 2 includes a respective bar-shaped terminal lug 1 and 4, fig. 3, each bar-shaped terminal lug being situated offset so that the respective terminal lugs may be brought out from the converter module on a same level (see fig. 3).

Regarding claim 15: Watanabe as modified discloses the converter module as recited in claim 11, wherein the converter module is situated in an injection molded plastic housing 5, fig. 2 (Abstract).

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Regarding claim 17: Watanabe as modified discloses in fig. 7 and 8 a line of multiple single-phase converter modules, comprising: a plurality of converter modules, each of the converter modules including a positive terminal 1, a negative terminal 4, a phase terminal 2, a first semiconductor chip D_2 , fig. 2 and a second semiconductor chip D_1 , the positive terminal 1, negative terminal 4, the phase terminal 2, the first semiconductor chip, and the second semiconductor chip being situated on top of one another in a stack; wherein at least one of the positive terminal, the negative terminal, and the phase terminal includes a contact plate 4A, fig. 4 a bar-shaped terminal lug 4 which is positioned asymmetrically on the contact plate, and an auxiliary element 4B, fig. 6 which prevents the at least one of the positive terminal, the negative terminal, and the phase terminal from tilting about a longitudinal axis of the terminal lug, the auxiliary element being able to be detached after the converter module is assembled. Although Watanabe doesn't explicitly teach the phase terminal is structurally shaped identically to one of the positive terminal or the negative terminal, at time the invention was made, it was well known, that electrical terminals can be different shapes and sizes. For example, Watanabe teaches different shapes of the terminals (shown in fig. 3). Further the courts have held that change in shape or change in size of configuration, without any criticality, is within the level of skill in the art as particular shape or size claimed by applicant is nothing more than one of numerous shape or size that a person of ordinary skill in the art would have found obvious to provide using routine experimentation based on its suitability for the intended use of the invention, See *In re Dailey*, 149 USPQ 47 (CCPA 1966).

Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made for Watanabe to include in his invention the phase terminal is structurally shaped identically to one of the positive terminal or the negative terminal in order to simplify manufacturing process and since the courts have held that change in shape or change in size of configuration, without any criticality, is within the level of skill in the art as particular shape or size claimed by applicant is nothing more than one of numerous shape or size that a person of ordinary skill in the art would have found

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obvious to provide using routine experimentation based on its suitability for the intended use of the invention, See *In re Dailey*, 149 USPQ 47 (CCPA 1966).

Regarding claim 27: Watanabe as modified discloses the line of multiple single-phase converter modules as recited in claim 17, wherein the bar-shaped terminal lug 1,4, fig. 3-8 is situated offset with respect to a plane created by the contact plate, and wherein at least two of the positive terminal 1, the negative terminal 4, and the phase terminal 2 includes a respective bar-shaped terminal lug 4,1, each bar-shaped terminal lug being situated offset so that the respective terminal lugs may be brought out from the converter module on a same level.

7.2. Claims 16 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe as applied to claims 11, 13-15, 17 and 27 above, and further in view of Irmmler (Patent No: WO-7900814) hereinafter Irmmler.

Regarding claim 16: Watanabe as modified discloses the converter module as recited in claim 11,

except Watanabe doesn't explicitly teach the auxiliary element has a positioning aperture for positioning the auxiliary element in a joining device.

Irmmler teaches in fig. 1 the phase terminal 24, fig. 1 is configured identically to one of the positive terminal 22 or the negative terminal 23; and at least one of the position (positive) terminal, the negative terminal and the phase terminal is positioned in the joining device using an aperture provided in the auxiliary element (see fig. 1 and 4).

Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made, for Watanabe to include in his invention the auxiliary element has a positioning aperture for positioning the auxiliary element in a joining device, as taught by Irmmler, in order to provide connection to electrical circuit.

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Regarding claim 28: Watanabe as modified discloses the converter module as recited in claim 17, wherein the converter module is situated in an injection molded plastic housing 5 (Abstract),

except, Watanabe doesn't teach the auxiliary element has a positioning aperture for positioning the auxiliary element in a joining device.

Irmeler teaches in Fig. 1 the phase terminal 24, Fig. 1 is configured identically to one of the positive terminal 22 or the negative terminal 23; and at least one of the position (positive) terminal, the negative terminal and the phase terminal is positioned in the joining device using an aperture provided in the auxiliary element (see Fig. 1 and 4).

Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made, for Watanabe to include in his invention that the auxiliary element has a positioning aperture for positioning the auxiliary element in a joining device, as taught by Irmeler, in order to provide connection to electrical circuit.

Regarding claim 29: Watanabe as modified discloses the converter module as recited in claim 17, wherein the bar-shaped terminal lug 1, 4, fig. 3-8 is situated offset with respect to a plane created by the contact plate 1A, wherein at least two of the positive terminal 1, the negative terminal 4, and the phase terminal 2 includes a respective bar-shaped terminal lug 1, 4 each bar-shaped terminal lug being situated offset, fig. 6 so that the respective terminal lugs may be brought out from the converter module on a same level, wherein the converter module is situated in an injection molded plastic housing 5 (Abstract),

except, Watanabe doesn't teach the auxiliary element has a positioning aperture for positioning the auxiliary element in a joining device.

Irmeler teaches in Fig. 1 the phase terminal 24, fig. 1 is configured identically to one of the positive terminal 22 or the negative terminal 23; and at least one of the position (positive) terminal, the negative terminal and the phase terminal is positioned in the joining device using an aperture provided in the auxiliary element (see fig. 1 and 4).

Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made, for Watanabe to include in his invention that the auxiliary

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element has a positioning aperture for positioning the auxiliary element in a joining device, as taught by Irmeler in order to provide connection to electrical circuit.

Regarding claim 30: Watanabe as modified by the teaching of Irmeler discloses the converter module as recited in claim 29,

except Watanabe doesn't teach at least one of the position terminal, the negative terminal and the phase terminal is positioned in the joining device using an aperture provided in the auxiliary element.

Irmeler teaches in Fig. 1 the phase terminal 24, Fig. 1 is configured identically to one of the positive terminal 22 or the negative terminal 23; and at least one of the position (positive) terminal, the negative terminal and the phase terminal is positioned in the joining device using an aperture provided in the auxiliary element (see Fig. 1 and 4).

Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made, for Watanabe to include in his invention at least one of the positive terminal, the negative terminal and the phase terminal is positioned in the joining device using an aperture provided in the auxiliary element, as taught by Irmeler, in order to provide connection to electrical circuit.

Regarding claim 31: Watanabe as modified by the teaching of Irmeler discloses the line of multiple single-phase converter modules as recited in claim 29, wherein the positive terminal 1, Fig. 4 or the negative terminal 4 and the phase terminal 2 are identical parts which are inserted into the joining device rotated by 180°, fig. 4.

Response to Arguments

8. Applicant's arguments filed 07/27/2009 have been fully considered but are moot in view of the new grounds of rejection.

Allowable Subject Matter

9. Claims 18-26 and 32-36 are allowed.

The following is a statement of reasons for the indication of allowable subject matter claims 18-26: the limitations (step) “the phase terminal being situated rotated by 180° about the longitudinal axis of the terminal lug in relation to an orientation of the phase terminal that would be identical to an orientation of one of the structurally identically shaped positive terminal or the structurally identically configured shaped negative terminal” in combination with other claimed limitations in independent claim 18 is not disclosed or suggested by the prior art of record. Claims 19-26 are either directly or indirectly dependent upon claim 18.

The following is a statement of reasons for the indication of allowable subject matter claims 32-36: the limitations “a bar-shaped phase terminal lug of the phase terminal and a bar-shaped terminal lug of one of the positive terminal and the negative terminal extend in a same direction, and wherein the bar-shaped phase terminal lug and the bar-shaped terminal lug are adjacent to each other and extend alongside each other” in combination with other claimed limitations in independent claim 32 is not disclosed or suggested by the prior art of record. Claims 33-36 are either directly or indirectly dependent upon claim 32.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuriy Semenenko whose telephone number is (571) 272-6106. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A. Reichard can be reached on (571)- 272-2800 ext. 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yuriy Semenenko/

Examiner, Art Unit 2841